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EXAMINER

CHENCINSKI, SIEGFRIED E

ART UNIT	PAPER NUMBER
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3628

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,681

Applicant(s)

LEE ET AL.

Examiner

Siegfried E. Chencinski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/12/01, 10/03/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Minor Informalities

1. **Claims 4, 5-7, 15, 16-18 and 36 are objected to** because of the following informalities:

Re. claim 4, the limitation appears to be missing the word "to" between the words "whether" and "obtain".

Re. claim 6, the limitation appears to be missing the word "to" between the words "whether" and "hold".

Re. Claims 15 and 36, the third limitation has a missing word in the phrase "training a statistical model generate a score ...". The context suggests that the word "to" is missing between the words model and generate.

Claims 5-7 and 16-18 are objected to because of their dependency status to claims 4, 6, 15 and 36.

Appropriate correction is required.

Specification

2. **The specification is objected to** because it contains indefinite language. The indefinite language is the expression "model training". Applicants have not taken advantage of their right to be their own lexicographers by not making clear the meaning of the expressions "model training" contained on page 16, line 22 and on page 17, line 28, and the expression "false positive", contained in page 61, line 9, and following. The ordinary practitioner of the art is left to excessive deliberation in order to arrive at a clear understand the meanings of these expressions in the context of the invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claims 15, 16, 17, 18, 27, 33 and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims listed below in sub paragraphs a) and b) contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a) The limitation containing the expression "training a statistical model" in independent claim.

b) The limitations in claims 16, 17, 27, 33 and 34 which include the term "false positive".

These two expressions are not well known in the context in which they are employed, which is the art of statistical modeling, and thus should have been explained within the right and opportunity of the Applicant to be his own lexicographer.

Claim 18 is rejected due to its dependence on claim 15.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In line one of the rejected claims, "the method" does not have proper antecedent basis, respectively.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. Claims 1-28, 29, 33 and 34 are rejected because the claimed invention is directed to non-statutory subject matter. The claimed invention is not in the technological arts, such as a computer system. None of these independent claims claim a computer automated system. In some claims no mention is made at all of technology. IN others the use is trivial, such as in claim 29. The phrase "an online transaction" is trivial and insufficient in establishing a technological art within the claim limitations because it permits the hand copying of information from online information. The technological automation must be the manner in which the technological limitation functions so that it rules out non-computer automated methods and systems. Claims 17 and 18 are also rejected due to their dependent status on claims 15 and 16.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 8, 11, 15, 19-21, 22, 28, 29, 31, 32, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Pettitt (US Patent 6,029,154).

Re. Claim 1, Pettitt anticipates a computer implemented method of processing an online transaction, the method comprising:

- generating from an online transaction of a purchaser, a plurality of keys from key fields of the transaction that individually do not reliably identify the purchaser (Col. 3, ll. 1-3, collecting new key field data in order to match against prior key field data base data, l. 7 – internet address, l. 17-20 - dollar amount, ll. 37-44 – physical address, physical location, internet address);
- for each key, retrieving a profile of historical transactions associated with the key (Col. 3, l. 3 – history database);

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- weighting each profile with a weight indicating a degree to which the profile is associated with current purchaser (Col. 3, Il. 17-18 – weighting parameters, Il. 55-59 – weighting the variety of parameters); and
- generating a fraud score indicative of the likelihood of fraud in the online transaction as a function of the weighted profiles and the current transaction (Col. 3, Il. 54-59, the fraud score is the “quantifiable indication on whether the credit and transaction is fraudulent”).

Re. Claim 2, Pettitt anticipates a method wherein the key fields of the online transaction includes fields associated with any of purchaser identification information, order information, and payment information (Col. 3, Il. 19-20 – dollar amount of the transaction).

Re. Claim 3, Pettitt anticipates a method wherein each profile for a key includes a plurality of summary variables derived from the associated historical transactions, and which summarize the historical transactions having the key in a key field of the historical transactions (Col. 3, Il. 1-11 – history database, including data added by other merchants, Il. 41-46 – the number and map of historical transactions).

Re. Claim 8, Pettitt anticipates a method further comprising:
using the fraud score to determine whether to approve the transaction or decline the transaction (Col. 2, Il. 54-56; Col. 3, Il. 56-60).

Re. Claim 11, Pettitt anticipates a method wherein using the fraud score to determine whether to approve the transaction or decline the transaction further comprises:
applying a plurality of rules to the fraud score and to the transaction (Col. 1, Il. 49-53; Col. 2, Il. 23-29, 35-38, 47-56; Col. 2, I. 57 – Col. 3, I. 60).

Claims 15 & 36, Pettitt anticipates a method of and system for developing a statistical model of online transactions, the method comprising:

- storing from a plurality of different online merchants, transactions for a plurality of different purchasers, each transaction indicated as being fraudulent or non-fraudulent (Col. 2, Il. 18, 29-31; Fig. 3, 202);

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- for each of a plurality of key fields of the transaction, including at least one key field for which all of the possible keys of the key field do not reliably identify a purchaser of the transaction, generating for each key of the key field, a profile for all of the transactions having a matching key for the key field, such that at least one profile summarizes the transactions of a plurality of different individuals (Col. 2, ll. 42-52; Col. 2, l. 57 – Col. 3, 16);
- generating a contrast measure comparing the summary variables of at least two of the profiles (Col. 2, ll. 57-65. The consistency check feature uses the contrast measure technique by comparing summary variables of the new information with the like variables in the historic information.); and
- training a statistical model to generate a score for a transaction, the score indicative of a likelihood that the transaction is fraudulent, by using as training inputs to the statistical model selected transactions, the profiles associated with the keys of the key fields of each selected transaction, and the contrast measures associated with the profiles (Col. 3, ll. 4-5. Pettitt teaches an increasing utility over time of the Internet ID verification system and of the history check feature. Score – Col. 3, ll. 17-19, 56-60).

Re. Claim 19, Pettitt anticipates a computer implemented method of processing an online transaction, the method comprising:

- generating from the online transaction of a purchaser, a plurality of keys from key fields of the transaction that individually do not reliably identify the purchaser (Col. 3, ll. 1-3, collecting new key field data in order to match against prior key field data base data, l. 7 – internet address, l. 17-20 - dollar amount, ll. 37-44 – physical address, physical location, internet address;);
- for each key, retrieving a profile of historical transactions associated with the key, each profile including at least one summary variable (Col. 3, ll. 3 – historical database; Col. 3, ll. 1-11 – history database, including data added by other merchants; Col. 3, ll. 41-46 – the number and map of historical transactions);

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- computing at least one contrast measure for a summary variable included in the set of profiles (Col. 2, ll. 57-65); and
- inputting the contrast measures, the online transaction data and the selected set of profiles into a predictive model to generate a fraud score indicative of the likelihood of fraud in the online transaction (Col. 2, ll. 42 - 56).

Re. Claim 20, Pettitt anticipates a method wherein the key fields of the online transaction includes fields associated with any of purchaser identification information, order information, and payment information (Col. 2, l. 42 – Col. 3, l. 11).

Re. Claim 21, Pettitt anticipates a method wherein each profile for a key includes a plurality of summary variables derived from the associated historical transactions, and which summarize the historical transactions having the key in a key field of the historical transactions (Col. 2, l. 66 – Col. 3, 11).

Re. Claim 22, Pettitt anticipates a method wherein computing at least one contrast measure for a summary variable comprises computing a ratio of the summary variables of the profiles (Col. 2, ll. 57-65. The consistency check feature uses the contrast measure technique by comparing summary variables of the new information with the like variables in the historic information.).

Re. Claims 28 & 35, Pettitt anticipates a computer implemented method and system of processing transactions to statistically identify a current purchaser, the method comprising:

- receiving a transaction (Fig. 2);
- generating from the transaction a plurality of keys, including keys containing keys that individually do not reliably identify the purchaser (Col. 2, l. 42 – Col. 3, l. 11);
- for each key, retrieving a profile summarizing historical transactions by purchasers whose profiles match the key (Col. 2, l. 44 – Col. 3, l. 11);
- weighting each of the retrieved profiles by a weight indicating the degree to which the profile is associated with the current purchaser (Col. 3, l. 17-19);

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- predicting the likelihood of fraud in the current transaction as a function of the weighted profiles and the current transaction (Col. 3, ll. 56-60).

Re. Claim 29, Pettitt anticipates a computer implemented method of identifying a current purchaser of online transaction, the method comprising:

- receiving an online transaction from a current purchaser, the online transaction including purchaser identification information (Fig. 2, Col. 2, ll. 17-21);
- generating from the online transaction a plurality of keys that individually do not reliably identify the current purchaser (Col. 2, l. 42 – Col. 3, l. 11);
- for each key, retrieving a profile summarizing a plurality of historical transactions associated with the key, each profile including a plurality of summary variables derived from the associated historical transactions (Col. 2, l. 66 – Col. 3, l. 11); and
- selecting as the profiles of the current purchaser the profiles having the most similar summary variables (Col. 3, ll. 1-3).

Re. Claim 31, Pettitt anticipates a system for scoring a transaction, the system comprising:

- a plurality of stored profiles, each profile associated with a key for one of a plurality of key fields of a transaction, the key fields including at least one key field that does not reliably identify a purchaser of a transaction, each profile including summary variables summarizing all transactions having a same key for at least one of the key fields (Col. 2, ll. 29-31; Col. 2, l. 42 – Col. 3, l. 16); and
- a statistical model that receives as inputs a transaction, a plurality of profiles, each profile summarizing transactions associated with a key for a key field, and at least one contrast measure that weights selected pairs of the profiles, and that produces a fraud score indicating the likelihood of fraud in the transaction (Col. 1, ll. 53-56; Col. 2, ll. 47-61; Col. 2, l. 66 – Col. 3, l. 60).

Re. Claim 32, Pettitt anticipates a system of claim 31, wherein the at least one contrast measure is a ratio of the summary variables of a selected pair of profiles (Col.

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2, ll. 57-65. The consistency check feature uses the contrast measure technique by comparing summary variables of the new information with the like variables in the historic information.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 10, 13, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt.

Re. Claim 9, Pettitt discloses a method responsive to determining to approve the transaction (Validating a transaction means approving a transaction – Col. 1, ll. 56-59). Pettitt does not explicitly disclose completing the transaction order and fulfilling payment instructions for the order. However, it is obvious to expect from an automated transaction process that an approved transaction will be followed by the steps of completing the transaction order and fulfilling payment instructions for the order. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known method in an automated transaction process of having an approved transaction be followed by the steps of completing the transaction order and fulfilling payment instructions for the order. Such a combination would have been motivated by the fundamental interests of the user buyer and the merchant seller to consummate an online transaction which has been deemed safe by the seller's verification system (Pettitt, Col. 1, ll. 57-67).

Re. Claim 10, Pettitt discloses a method responsive to determining to decline a transaction (Col. 1, ll. 48-58; Col. 2, ll. 17-21, 35-38. Determining that a transaction has a likelihood above the fraud detector threshold means declining a transaction). Pettitt does not explicitly disclose transmitting a signal indicating that the transaction is

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declined. However, it is obvious to expect from an automated transaction process that a declined online transaction will be followed by the steps of transmitting a signal indicating that the transaction is declined. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known method in an automated transaction process of having declined online transaction will be followed by the steps of transmitting a signal indicating that the transaction is declined. Such a combination would have been motivated by the fundamental interests of the merchant seller to decline an online transaction which has been deemed potentially fraudulent by the seller's verification system (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

Re. Claim 13, Pettitt discloses a method using the fraud score to determine whether to approve the transaction or decline the transaction further comprises:

declining the transaction if the fraud score is below a cutoff score. Pettitt does not explicitly disclose a method wherein the cutoff score is a function of a net margin of a merchant receiving the transaction. However, it has been a long standing and well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known method of using net profit as a determinant of a risk cutoff score in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable level through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

Re. Claim 14, Pettitt discloses a method wherein using the fraud score to determine whether to approve the transaction or decline the transaction. Pettitt does not explicitly disclose a method which further comprises:

- for each of a plurality of different product categories, defining a different cutoff score; and

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- responsive to the product category pertaining to the transaction, applying the cutoff score for the product category to the fraud score.

However, as stated in the rejection of claim 13 above, the well known credit management technique of managing credit according to profit margin will obviously create different cutoffs for different products since different products will have different net margins and other differing characteristics, such a product close-out or some other differing characteristic which would cause a merchant to assign a different parameter as the determinant of a risk cutoff. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known variables of risk cutoff score for different products in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable on the basis of different product considerations through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

Claim 18, Pettitt does not explicitly disclose a method wherein generating a contrast measure comprises computing a ratio of the summary variables of the at least two profiles. However, the computing of a ratio of the summary variables of the at least two profiles is an obvious manner in which to display the result of statistical comparisons. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known display of results for statistical comparisons in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable on the basis of different product considerations through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

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8. Claim 4-7, 23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt as applied to claims 1, 15 and 19 above, and further in view of French et al. (US Patent 6,282,658 B2, hereafter French).

Re. Claim 4, Pettitt discloses using a fraud score to determine whether to complete a transaction. Pettitt does not explicitly disclose a method further comprising: using the fraud score to determine whether obtain additional information prior to completing the transaction (Col. 3, ll. 54-59). However, French discloses a method of using a fraud score to determine whether to obtain additional information prior to completing the transaction (Using a validation check prior to a transaction, equivalent to a fraud score – Col. 7, ll. 46-67; obtaining Col. Col. 9, ll. 29-32; Col. 10, ll. 5-6, 66-67). It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of French for the purpose of determining whether to obtain additional information prior to completing the transaction, motivated by the desire to permit users who are entitled to be authenticated to permit a transaction the opportunity to be authenticated when the authentication system is unable to generate a passing fraud score (French, Col. 1, ll. 57-67).

Re. Claim 5, Pettitt does not explicitly disclose a method further comprising: responsive to determining to obtain additional information, presenting a form with questions selected to obtain the additional information from the purchaser. However, the method of presenting users a form for providing additional information on line has been well known prior to the date of Applicant's invention, such as a previous address, a previous telephone number, one's mother's maiden name, the name plate of one's first automobile, etc. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well known method of presenting a user with an online form for the purpose of providing additional information prior to completing the transaction, motivated by the desire to permit users who are entitled to be authenticated to permit a transaction the opportunity to be authenticated when the authentication system is unable to generate a passing fraud score (French, Col. 1, ll. 57-67).

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Re. Claim 6, Pettitt does not explicitly disclose a method further comprising: using the fraud score to determine whether to hold the transaction for further review by a human analyst. However, French discloses using the fraud score to determine whether to hold the transaction for further review by a human intervention, meaning a human analyst (Col. 18, ll. 55-60). It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of French for the purpose of determining whether to obtain additional information prior to completing the transaction, motivated by the merchant's desire risk the possibility of a fraudulent transaction when the authentication system is unable to generate a passing fraud score (French, Col. 2, ll. 1-5).

Re. Claim 7, Pettitt does not explicitly disclose a method further comprising: responsive to determining to hold the transaction for further review, outsourcing the transaction to a file for review by human analyst to determine whether to decline or approve the transaction, or obtain additional information prior to completing the transaction. However, French discloses accomplishing the comparisons through human intervention (Col. 18, ll. 55-60). As part of a computer automated method, it is obvious that the method would involve outsourcing the transaction to a file for review by a human analyst to determine whether to decline or approve the transaction, or obtain additional information prior to completing the transaction. It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of French for the purpose of using human intervention to determine the probability of a fraudulent transaction prior to completing the transaction. The motivation to do this would have been the desire to make a sale under conditions where the risk of fraud is within acceptable limits when the computer automated authentication system is unable to generate a passing fraud score (French, Col. 2, ll. 1-5).

Re. Claim 23, Pettitt discloses a method comprising:

- comparing the fraud score to a plurality of thresholds to determine whether to approve or decline the transaction (Col. 2, ll. 42-56; Col. 3, ll. 56-60).

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- responsive to determining to approve the transaction, completing the transaction order, and fulfilling payment instructions for the online order, and completing the transaction (Col. 2, ll. 54-56; Col. 3, 56-60. Completion of the transaction order, payment instructions and transaction completion are inherent);
- responsive to determining to decline the transaction, transmitting to the purchaser/the merchant/ a signal indicating that the transaction is declined (Col. 2, ll. 54-56; Col. 3, 56-60. The action steps for the declination are inherent).

Pettitt does not explicitly disclose

- obtaining more information for the transaction, or holding the transaction for further review by a human analyst;
- responsive to determining to obtain additional information that is necessary to complete the transaction, presenting a form with questions selected to obtain the additional information from the purchaser; and
- responsive to determining to hold the transaction for further review, outsourcing the transaction to a file for review by human analyst to determine whether to decline, approve or obtain additional information.

However, French discloses

- obtaining more information for the transaction (Col. 3, ll. 34-36), or holding the transaction for further review by a human analyst (Col. 18, ll. 55-60);
- responsive to determining to obtain additional information that is necessary to complete the transaction, presenting a form with questions selected to obtain the additional information from the purchaser (Presenting a form to the user for the purpose of presenting the questions to the user is a necessary means for presenting the request to the user); and
- responsive to determining to hold the transaction for further review, outsourcing the transaction to a file for review by human analyst to determine whether to decline, approve or obtain additional information. As part of a computer automated method, it is obvious that the method would involve outsourcing the

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transaction to a file for review by a human analyst to determine whether to decline or approve the transaction, or obtain additional information prior to completing the transaction.

It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and well known and necessary steps with the art of French for the purpose of taking extra precautions under uncertain fraud indicator conditions to determine the probability of a fraudulent transaction prior to completing the transaction. The motivation to do this would have been the desire to make a sale under conditions where the risk of fraud is within acceptable limits when the computer automated authentication system is unable to generate a passing fraud score (French, Col. 2, ll. 1-5).

Re. Claim 25, Pettitt and French disclose a method wherein comparing the fraud score to a plurality of thresholds.

Neither Pettitt nor French explicitly disclose

- for each of a plurality of different product categories, defining a different cutoff score; and
- responsive to the product category pertaining to the transaction, applying the cutoff score for the product category to the fraud score.

However, as stated in the rejection of claim 13 above, the well known credit management technique of managing credit according to profit margin will obviously create different cutoffs for different products since different products will have different net margins and other differing characteristics, such a product close-out or some other differing characteristic which would cause a merchant to assign a different parameter as the determinant of a risk cutoff. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and French with the well known variables of risk cutoff score for different products in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable on the basis of different product considerations

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through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

Re. Claim 26, Pettitt and French disclose a method wherein determining whether to decline the transaction, and declining the transaction if the fraud score is below a cutoff score (Col. 3, ll. 56-60).

Neither Pettitt nor French explicitly disclose a method wherein the cutoff score is a function of a net margin of a merchant receiving the transaction.

However, as stated in the rejection of claim 13 above, it has been a long standing and well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and French with the well known method of using net profit as a determinant of a risk cutoff score in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable level through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

Re. Claim 27, Pettitt and French disclose a method of using a cutoff score.

Neither Pettitt nor French explicitly disclose the cutoff score as a function of a net margin which comprises setting the cutoff score to be a transaction false positive rate TFRP according to the equation: $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$.

However, the cutoff score as a function of a net margin has been well known (See the rejection of claim 26, above). It is obvious to use a mathematical equation to express the application of the cutoff score through the net margin parameter, such as follows: $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$, because this merely is the mathematical way to express the application of a net margin cut-off score, and a computer automated method would necessarily have to use a mathematical expression to express a quantitative formula. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and French with the well known method of using net margin as a determinant of a risk

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cutoff score through the application of the equivalent equation in a computer automated transaction process. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk losses below an acceptable level through the merchant seller's efficient computer automated verification method (Pettitt, Col. 1, ll. 57-67; Col. 2, ll. 23-29, 52-56).

9. Claims 30 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt in view of French.

Re. Claim 30, Pettitt discloses a system for processing online transactions, the system comprising:

- a rule engine that receives from a scoring system a fraud score associated with a transaction, the fraud score indicating the likelihood of fraud in the transaction, which applies a plurality of stored rules to the fraud score, each rule providing a condition and an action to perform in response to the transaction or the fraud score, to determine according to the rules whether to approve or decline the transaction (Col. 1, ll. 48-59; Col. 2, 5-7, 17-56).

Pettitt does not explicitly disclose

- a request for more information from the purchaser, or to hold the transaction for review by a human analyst;
- an outsort management workstation that receives from the rule engine transactions to be held for review, stores the transactions in queues, and provides access to the queues to a human analyst in order to review transactions in the queues, the outsort management workstation further adapted to define for each queue at least one criteria for associating a transaction with the queue; and
- a policy management workstation adapted to access the stored rules, and define rules for the rule engine to apply.

However, French discloses

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- a request for more information from the purchaser(Col. 3, ll. 34-36), or holding the transaction for further review by a human analyst (Col. 18, ll. 55-60);
- an outsort management workstation that receives from the rule engine transactions to be held for review, stores the transactions in queues, and provides access to the queues to a human analyst in order to review transactions in the queues, the outsort management workstation further adapted to define for each queue at least one criteria for associating a transaction with the queue (Col. 18, ll. 58-62; Col. 19, l. 32 – Col. 20, 67. These systems steps are obviously necessary to carry out these functions in a computer automated system); and
- a policy management workstation adapted to access the stored rules, and define rules for the rule engine to apply (Col. 18, ll. 58-62; Col. 19, l. 32 – Col. 20, 67. These systems steps are obviously necessary to carry out these functions in a computer automated system).

It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and well known and necessary steps with the art of French for the purpose of taking extra precautions under uncertain fraud indicator conditions to determine the probability of a fraudulent transaction prior to completing the transaction. The motivation to do this would have been the desire to make a sale under conditions where the risk of fraud is within acceptable limits when the computer automated authentication system is unable to generate a passing fraud score (French, Col. 2, ll. 1-5).

Re. Claim 37, Pettitt discloses a system for processing online transactions, the system comprising:

- a rule engine having a function of determining whether to approve a transaction or decline the transaction, wherein each rule defines a condition and an action to perform in response to the transaction or the fraud score, to produce a determination for handling the transaction (Col. 1, ll. 48-59; Col. 2, 5-7, 17-56);

Pettitt does not explicitly disclose

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- requesting more information from the purchaser of the transaction, or holding the transaction for review by a human analyst by way of receiving a fraud score for the transaction from a scoring system and applying rules to the fraud score, wherein each rule defines a condition and an action to perform in response to the transaction or the fraud score, to produce a determination for handling the transaction.
- an outsort management workstation having a function of queuing transactions to be held for review and providing access to the queues to a human analyst in order to review transactions in the queues by way of receiving from the rule engine transactions to be held for review and storing the transactions in queues, each queue having at least one criteria for storing a transaction in the queue, to produce a set of queues, each queue storing one or more transactions; and
- a policy management workstation having a function of defining rules for the rule engine to apply, by way of providing access to the stored rules.

However, French discloses

- requesting more information from the purchaser of the transaction (Col. 3, ll. 34-36), or holding the transaction for review by a human analyst (Col. 18, ll. 55-60) by way of receiving a fraud score for the transaction from a scoring system and applying rules to the fraud score, wherein each rule defines a condition and an action to perform in response to the transaction or the fraud score, to produce a determination for handling the transaction (Col. 18, ll. 58-62; Col. 19, l. 32 – Col. 20, 67. These systems steps are obviously necessary to carry out these functions in a computer automated system).
- an outsort management workstation having a function of queuing transactions to be held for review and providing access to the queues to a human analyst in order to review transactions in the queues by way of receiving from the rule engine transactions to be held for review and storing the transactions in queues, each queue having at least one criteria for storing a transaction in the queue, to produce a set of queues, each queue storing one or more

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transactions (Col. 18, ll. 58-62; Col. 19, l. 32 – Col. 20, 67. These systems steps are obviously necessary to carry out these functions in a computer automated system); and

- a policy management workstation having a function of defining rules for the rule engine to apply, by way of providing access to the stored rules (Col. 18, ll. 58-62; Col. 19, l. 32 – Col. 20, 67. These systems steps are obviously necessary to carry out these functions in a computer automated system).

It would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt and well known and necessary steps with the art of French for the purpose of taking extra precautions under uncertain fraud indicator conditions to determine the probability of a fraudulent transaction prior to completing the transaction. The motivation to do this would have been the desire to make a sale under conditions where the risk of fraud is within acceptable limits when the computer automated authentication system is unable to generate a passing fraud score (French, Col. 2, ll. 1-5).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt as applied to claim 8, and further in view of Putta et al. (US PreGrant Publication 2001/0032192 A1, hereafter Putta).

Re. Claim 12, Pettitt discloses a method wherein using the fraud score to determine whether to approve the transaction or decline the transaction further comprises a history check which includes the active matching of previous database information within the history database which can be added to by other merchants. The analysis of velocity data suggests a review of the number of transactions over time, especially most recently. Further, Putta discloses applying the use of velocity analysis in managing credit card instruments in the context of maintaining security (Page 2, [0019], ll. 5-8). Further, the concept of velocity has been a well established analytical tool in various aspects of finance at the time of Applicant's invention. Hence, it would have been obvious to an ordinary practitioner of the art at the time of Applicant's invention to have made use of improved financial instrument processing, including

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making use of velocity data measuring a frequency of the attribute in a plurality of transactions; and applying a velocity rule to the velocity data. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well established concept of financial velocity analysis and with the art of Putta for the purpose making use of velocity data measuring a frequency of the attribute in a plurality of transactions and applying a velocity rule to the velocity data to determine the probability of a fraudulent transaction prior to completing the transaction. The incorporation of the Putta teaching would have been motivated by the desire to use more flexible methods of processing transactions and payments based on existing credit card processing infrastructure while requiring minimal changes thereto. (Putta, Page 2, [0021], ll. 1-4).

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt and French as applied to claim 23 above, and further in view of Putta et al. (US PreGrant Publication 2001/0032192 A1, hereafter Putta).

Re. Claim 24, Pettitt discloses a method wherein comparing the fraud score to a plurality of thresholds

Pettitt does not explicitly disclose:

- storing velocity data based on an attribute of the transaction, the velocity data measuring a frequency of the attribute in a plurality of transactions; and
- applying a velocity rule to the velocity data.

The analysis of velocity data suggests a review of the number of transactions over time, especially most recently. Further, Putta discloses applying the use of velocity analysis in managing credit card instruments in the context of maintaining security (Page 2, [0019], ll. 5-8). Further, the concept of velocity has been a well established analytical tool in various aspects of finance at the time of Applicant's invention. Hence, it would have been obvious to an ordinary practitioner of the art at the time of Applicant's invention to have made use of improved financial instrument processing, including making use of velocity data measuring a frequency of the attribute in a plurality of transactions; and applying a velocity rule to the velocity data. Therefore, it

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would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the well established concept of financial velocity analysis and with the art of Putta for the purpose making use of velocity data measuring a frequency of the attribute in a plurality of transactions and applying a velocity rule to the velocity data to determine the probability of a fraudulent transaction prior to completing the transaction. The incorporation of the Putta teaching would have been motivated by the desire to use more flexible methods of processing transactions and payments based on existing credit card processing infrastructure while requiring minimal changes thereto. (Putta, Page 2, [0021], ll. 1-4).

12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt in view of Gopinathan et al. (US Patent 5,819,226, hereafter Gopinathan).

Claim 16, Pettitt discloses a method comprising:

- setting a cutoff score for rejecting a transaction (Col. 3, ll. 42-49, 54-60; Fig. 4. The cut-off score is inherent)

Pettitt does not explicitly disclose

- determining a desired transaction false positive rate as a function of a net margin;
- selecting the score generated by the statistical model having an actual transaction false positive rate substantially similar or identical to the desired transaction false positive rate.

However, Gopinathan discloses

- determining a desired transaction false positive rate as a function of selected parameters (Col. 1, ll. 58-59);

Gopinathan does not explicitly disclose

- determining a desired transaction false positive rate as a function of a net margin (Col. 1, ll. 58-59).

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- selecting the score generated by the statistical model having an actual transaction false positive rate substantially similar or identical to the desired transaction false positive rate.

However, margins of various definitions have been a well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Further, the goal of modeling is to find modeled results which are substantially similar to or identical to the desired actual phenomenon, in this case the desired transaction false positive rate. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of Gopinathan and well known credit management and statistical modeling practices to establish a cutoff score for rejecting a computer automated online transaction. Such a combination would have been motivated by the merchant's fundamental interest in screening transactions and isolating those which are likely to be fraudulent (Gopinathan, Col. 2, ll. 15-20).

Claim 17, Pettitt does not explicitly disclose a method of determining a desired transaction false positive rate as a function of a net margin which comprises setting the transaction false positive rate TFRP according to the equation: $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$. However, Gopinathan discloses determining a desired transaction false positive rate as a function of selected parameters (Col. 1, ll. 58-59);

Gopinathan does not explicitly disclose setting the transaction false positive rate TFRP according to the equation: $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$.

However, this equation merely expresses in equation form the application of the well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of Gopinathan and well known credit management and statistical modeling practices to establish a cutoff score for rejecting a computer automated online transaction. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk

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losses below an acceptable level through the merchant seller's efficient computer automated verification method (Gopinathan, Col. 2, ll. 15-20).

13. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettitt in view of Gopinathan.

Re. Claim 33, Pettitt discloses a method of establishing a cutoff score for a transaction processing system that processes transactions of a merchant, the method comprising:

- providing a statistical model that generates a score categorizing a transaction, the score used by the merchant to accept or reject the transaction (Col. 2, ll. 42-56).

Pettitt does not explicitly disclose

- determining for each of a plurality of scores generated by the statistical model an actual transaction false positive rate;
- determining a desired transaction false positive rate as a function of the merchant's net margin; and
- setting the cutoff score for rejecting transactions as a score having an actual transaction false positive rate approximating or equal to the desired transaction false positive rate.

However, Gopinathan discloses

- determining for each of a plurality of scores generated by the statistical model an actual transaction false positive rate (Col. 1, ll. 58-59).

Gopinathan does not explicitly disclose

- determining a desired transaction false positive rate as a function of the merchant's net margin (Col. 1, ll. 58-59); and
- setting the cutoff score for rejecting transactions as a score having an actual transaction false positive rate approximating or equal to the desired transaction false positive rate.

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However, margins of various definitions have been a well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Further, the goal of modeling is to find modeled results which have substantially similar to or identical to the desired actual phenomenon, in this case the desired transaction false positive rate. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of Gopinathan and well known credit management and statistical modeling practices to establish a cutoff score for rejecting a computer automated online transaction. Such a combination would have been motivated by the merchant's fundamental interest in screening transactions and isolating those which are likely to be fraudulent (Gopinathan, Col. 2, ll. 15-20).

Re. Claim 34, Pettitt does not explicitly disclose a method wherein determining a desired transaction false positive rate as a function of the merchant's net margin comprises:

- setting the transaction false positive rate TFPR according to the equation:
- $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$

wherein Net Margin is the merchant's net margin.

However, Gopinathan discloses determining a desired transaction false positive rate as a function of selected parameters (Col. 1, ll. 58-59);

Gopinathan does not explicitly disclose setting the transaction false positive rate TFPR according to the equation: $TFRP = (1 - \text{Net Margin}) / \text{Net Margin}$.

However, this equation merely expresses in equation form the application of the well known credit management practice to manage credit risk on the basis of various profit considerations, including the net margin of a sale. Therefore, it would have been obvious to an ordinary practitioner of the art at the time of applicant's invention to have combined the art of Pettitt with the art of Gopinathan and well known credit management and statistical modeling practices to establish a cutoff score for rejecting a computer automated online transaction. Such a combination would have been motivated by the fundamental interests of the merchant seller to maintain credit risk

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losses below an acceptable level through the merchant seller's efficient computer automated verification method (Gopinathan, Col. 2, ll. 15-20).

Conclusion

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Siegfried Chencinski whose telephone number is 703-305-6199. The Examiner can normally be reached Monday through Friday, 9am to 6pm. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Hyung S. Sough, can be reached on 703- 308-0505.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703) 308-1113.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington D.C. 20231

or faxed to:

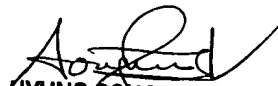
(703)872-9306 [Official communications; including After Final communications labeled "Box AF"]

(703) 746-9601 [Informal/Draft communications, labeled "PROPOSED" or "DRAFT"]

Hand delivered responses should be brought to Crystal Park 5, 2411 Crystal Drive, Arlington, VA, 7th floor receptionist.

SEC

March 31, 2005


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